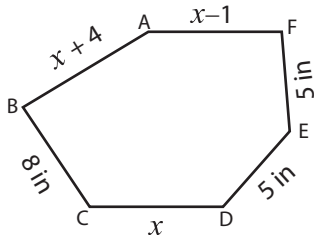


Polygon - Finding Unknown Sides

Example:



Perimeter = 42 in

Perimeter = Sum of length of the sides

$$42 \text{ in} = x - 1 + 5 + 5 + x + 8 + x + 4$$

$$42 \text{ in} = 3x + 21$$

$$3x = 42 - 21 = 21$$

$$x = \frac{21}{3} = 7 \text{ in}$$

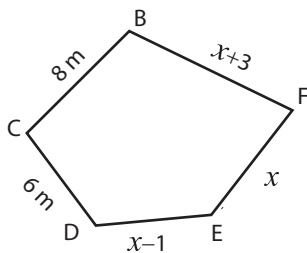
$$\overline{AB} = x + 4 = 7 + 4 = \mathbf{11 \text{ in}}$$

$$\overline{CD} = x = \mathbf{7 \text{ in}}$$

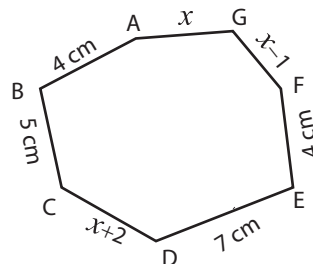
$$\overline{AF} = x - 1 = 7 - 1 = \mathbf{6 \text{ in}}$$

Find the value of x and length of the unknown sides.

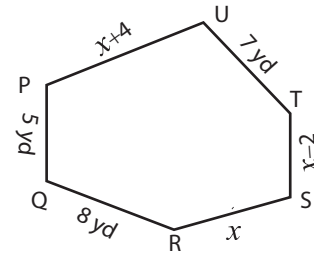
1)

Perimeter = 37 m ; $x =$ _____ $\overline{DE} =$ _____ ; $\overline{EF} =$ _____ ; $\overline{BF} =$ _____

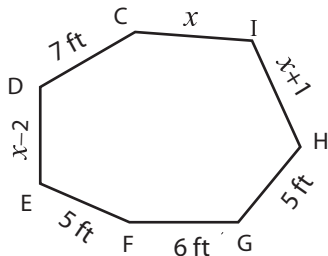
2)

Perimeter = 30 cm ; $x =$ _____ $\overline{AG} =$ _____ ; $\overline{CD} =$ _____ ; $\overline{FG} =$ _____

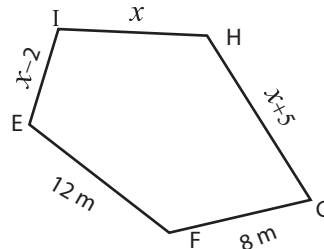
3)

Perimeter = 40 yd ; $x =$ _____ $\overline{PU} =$ _____ ; $\overline{RS} =$ _____ ; $\overline{ST} =$ _____

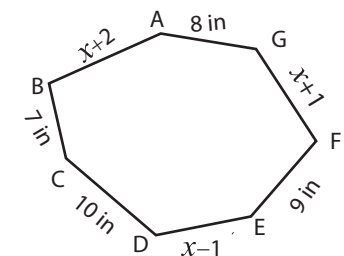
4)

Perimeter = 46 ft ; $x =$ _____ $\overline{CI} =$ _____ ; $\overline{DE} =$ _____ ; $\overline{HI} =$ _____

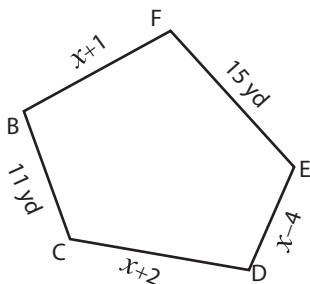
5)

Perimeter = 50 m ; $x =$ _____ $\overline{GH} =$ _____ ; $\overline{HI} =$ _____ ; $\overline{EI} =$ _____

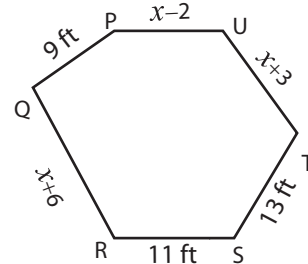
6)

Perimeter = 66 in ; $x =$ _____ $\overline{AB} =$ _____ ; $\overline{DE} =$ _____ ; $\overline{FG} =$ _____

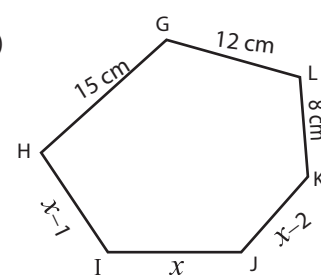
7)

Perimeter = 61 yd ; $x =$ _____ $\overline{DE} =$ _____ ; $\overline{CD} =$ _____ ; $\overline{BF} =$ _____

8)

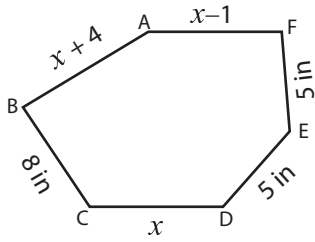
Perimeter = 70 ft ; $x =$ _____ $\overline{QR} =$ _____ ; $\overline{TU} =$ _____ ; $\overline{PU} =$ _____

9)

Perimeter = 65 cm ; $x =$ _____ $\overline{HI} =$ _____ ; $\overline{IJ} =$ _____ ; $\overline{JK} =$ _____

Answer Key

Example:



Perimeter = 42 in

Perimeter = Sum of length of the sides

$$42 \text{ in} = x - 1 + 5 + 5 + x + 8 + x + 4$$

$$42 \text{ in} = 3x + 21$$

$$3x = 42 - 21 = 21$$

$$x = \frac{21}{3} = 7 \text{ in}$$

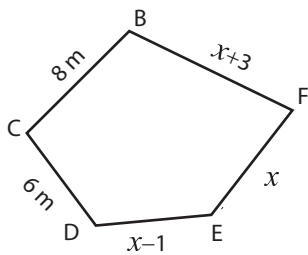
$$\overline{AB} = x + 4 = 7 + 4 = \mathbf{11 \text{ in}}$$

$$\overline{CD} = x = \mathbf{7 \text{ in}}$$

$$\overline{AF} = x - 1 = 7 - 1 = \mathbf{6 \text{ in}}$$

Find the value of x and length of the unknown sides.

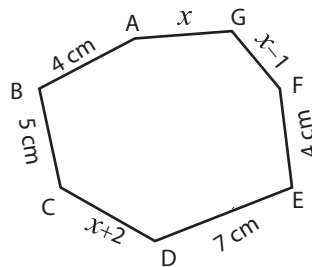
1)



$$\text{Perimeter} = 37 \text{ m} ; x = \mathbf{7 \text{ m}}$$

$$\overline{DE} = \mathbf{6 \text{ m}} ; \overline{EF} = \mathbf{7 \text{ m}} ; \overline{BF} = \mathbf{10 \text{ m}}$$

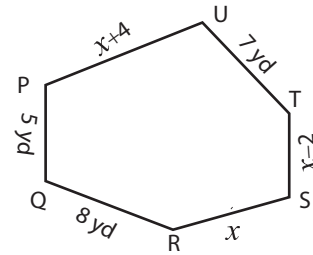
2)



$$\text{Perimeter} = 30 \text{ cm} ; x = \mathbf{3 \text{ cm}}$$

$$\overline{AG} = \mathbf{3 \text{ cm}} ; \overline{CD} = \mathbf{5 \text{ cm}} ; \overline{FG} = \mathbf{2 \text{ cm}}$$

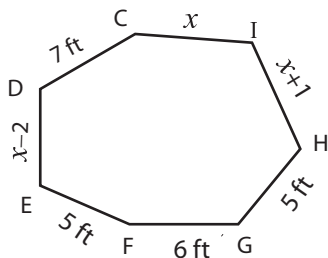
3)



$$\text{Perimeter} = 40 \text{ yd} ; x = \mathbf{6 \text{ yd}}$$

$$\overline{PU} = \mathbf{10 \text{ yd}} ; \overline{RS} = \mathbf{6 \text{ yd}} ; \overline{ST} = \mathbf{4 \text{ yd}}$$

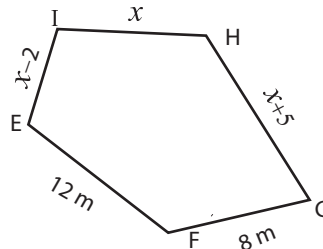
4)



$$\text{Perimeter} = 46 \text{ ft} ; x = \mathbf{8 \text{ ft}}$$

$$\overline{CI} = \mathbf{8 \text{ ft}} ; \overline{DE} = \mathbf{6 \text{ ft}} ; \overline{HI} = \mathbf{9 \text{ ft}}$$

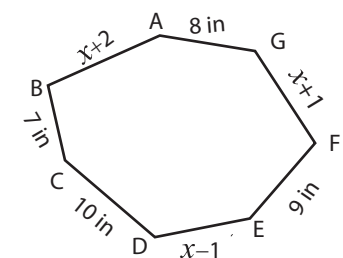
5)



$$\text{Perimeter} = 50 \text{ m} ; x = \mathbf{9 \text{ m}}$$

$$\overline{GH} = \mathbf{14 \text{ m}} ; \overline{HI} = \mathbf{9 \text{ m}} ; \overline{EI} = \mathbf{7 \text{ m}}$$

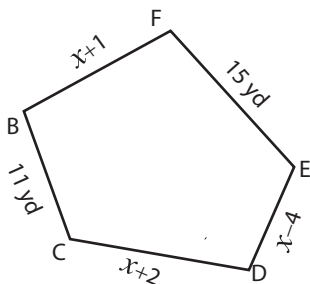
6)



$$\text{Perimeter} = 66 \text{ in} ; x = \mathbf{10 \text{ in}}$$

$$\overline{AB} = \mathbf{12 \text{ in}} ; \overline{DE} = \mathbf{9 \text{ in}} ; \overline{FG} = \mathbf{11 \text{ in}}$$

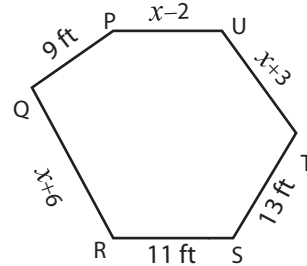
7)



$$\text{Perimeter} = 61 \text{ yd} ; x = \mathbf{12 \text{ yd}}$$

$$\overline{DE} = \mathbf{8 \text{ yd}} ; \overline{CD} = \mathbf{14 \text{ yd}} ; \overline{BF} = \mathbf{13 \text{ yd}}$$

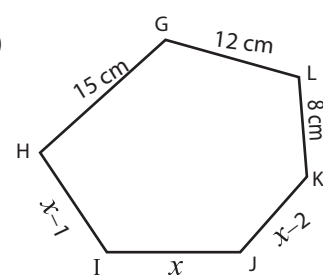
8)



$$\text{Perimeter} = 70 \text{ ft} ; x = \mathbf{10 \text{ ft}}$$

$$\overline{QR} = \mathbf{16 \text{ ft}} ; \overline{TU} = \mathbf{13 \text{ ft}} ; \overline{PU} = \mathbf{8 \text{ ft}}$$

9)



$$\text{Perimeter} = 65 \text{ cm} ; x = \mathbf{11 \text{ cm}}$$

$$\overline{HI} = \mathbf{10 \text{ cm}} ; \overline{IJ} = \mathbf{11 \text{ cm}} ; \overline{JK} = \mathbf{9 \text{ cm}}$$